

ANALOGY, MODEL, SYSTEM, AND GROUNDING

1. David Godden and John Grey proposed the idea of reasoning by grounded analogy. Essentially, their conception combines the logical theory of reasoning by analogy (formal or informal) and the (metaphysical) concept of grounding. Here is their result: "Reasoning by grounded analogy involves projecting a property from source to target on the basis that the fact that a source's having the similarities cited in the analogy totally grounds its having the projected property" [2, p. 5451]. It is worth noting that Godden and Grey based their combination on the following understanding of grounding: "Grounding is a polyadic explanatory relation among facts, with the form 'Facts f1, f2, f3, ... ground the fact that g.' The intuitive significance of the relation is that the facts f1, f2, f3, ..., constitute a non-causal metaphysical *explanation* for the fact that g" [2, p. 5441]. In simple terms, Godden and Grey offered a means of non-causal metaphysical explanation by analogy.

2. Avenir Uyemov identified 51 types of analogical reasoning, among which there is, for example, causal analogy [1, c. 70]. A new type of reasoning by analogy can be added to Uyemov's list, namely, reasoning by grounded analogy proposed by Godden and Grey.

3. Furthermore, Uemov argued that all modeling was based on reasoning by analogy [1, c. 68]. Hence, it can be assumed that there are types of modeling that are based on reasoning by grounded analogy. That is, such modeling is based on a non-causal metaphysical explanation.

4. Here [1], it is emphasized that "the modeling method can be viewed as a set of various procedures. These include constructing or finding a model, researching the model, transferring certain information from the model to the prototype, and applying the model and prototype in practice. If it is necessary to infer information from the model to the prototype, reasoning by logical or mathematical analogy can be used; the former can be formalized in various ways, for example, by means of traditional logic, predicate logic, or ternary description language. You can apply parametric general systems theory if you need to build a model. Then the research can be conducted on two levels: 1) system modeling: the model is represented as a system consisting of system descriptors (concept, structure, and substrate). Here, the relationship between the model and the prototype can take the form of a coincidence between the system descriptors of the systems, i.e., relational system parameters; 2) dual system modeling, which is based on two types (or models) of systems accepted in parametric general systems theory: a system with an attributive concept and a relational structure, and a system with a relational concept and an attributive structure. Here, relationships between the model and the prototype are established, represented as dual system objects" [1, c. 77]. Suppose one considers Godden's and Grey's reasoning by grounded analogy. In that case, it is possible to construct systems, for example, within the framework of Uyemov's parametric general systems theory, which will be based on non-causal metaphysical explanation, i.e., will be non-causal metaphysical system explanations.

5. Since the concept of grounding has been used to analyze the relationship between truthmakers and truthbearers (see [3, pp. 17–18], it will be possible to connect the theories of reasoning by analogy, modeling, and parametric general systems theory with the theory of truthmakers through grounding in the future.

References

1. Райхерт К. В. Щодо можливості двоїстого системного моделювання як методу дослідження інтеграції в сучасному науковому знанні. *Процеси інтеграції й диференціації в сучасному науковому та філософському знанні* / під ред. С. П. Шевцова. Одеса : Одес. нац. ун-т ім. І. І. Мечникова, 2022. С. 64–80.
2. Godden D., Grey J. Reasoning by grounded analogy. *Synthese*, 2021, no. 199, pp. 5419–5453. DOI: <https://doi.org/10.1007/s11229-020-02974-9>
3. Koons R. C., Pickavance T. H. *The Atlas of Reality : A Comprehensive Guide to Metaphysics*. Chichester : Wiley Blackwell, 2017. 700 p.